

## CLAIMS

What is claimed is:

- 5        1. A method for determining an aperture angle of a joint, said method comprising:  
detecting at least one of (i) positions of components forming the joint and  
(ii) positions of structures connected to or to be connected to the joint; and  
ascertaining the aperture angle of the joint from the detected positions.
- 10      2. The method as set forth in claim 1, further comprising:  
recording at least one of (i) joint structures and (ii) structures connected to  
or to be connected to the joint; and  
using the recorded structures to determine the aperture angle.
- 15      3. The method as set forth in claim 2, further comprising:  
performing a segmentation step to sub-divide the recorded structures.
- 20      4. The method as set forth in claim 2, further comprising:  
attaching reference markers to at least one of (i) the joint and (ii) the  
structures connected to or to be connected to the joint.
- 25      5. The method as set forth in claim 3, further comprising:  
registering at least one of (i) the joint and (ii) the structures connected to or  
to be connected to the joint.
- 30      6. The method as set forth in claim 5, further comprising:  
visualizing the ascertained aperture angle.
- 35      7. The method as set forth in claim 1, wherein ascertained aperture  
angles are stored in a storage unit.

8. The method as set forth in claim 1, further comprising:  
determining aperture angles of a natural joint in a plurality of directions;  
implanting an artificial joint;  
determining aperture angles of the implanted joint; and  
5 comparing the determined aperture angles of the natural joint with the  
determined aperture angles of the implanted joint.

9. The method as set forth in claim 1, further comprising applying  
defined forces in defined directions to the joint.

10 10. A computer program which, when it is loaded onto a computer or  
run on a computer, performs the method steps as set forth in claim 1.

11. A machine-readable storage medium having stored thereon  
15 sequences of instructions that, when executed, cause a system to perform the  
method as set forth in claim 1.

12. A device for determining an aperture angle of a joint, said device  
comprising:  
20 a detection device for detecting at least one of (i) positions of joint  
components and (ii) positions of structures connected to or to be connected to the  
joint; and  
a computational unit for ascertaining the aperture angle of the joint based  
on the detected positions.

25 13. The device as set forth in claim 12, further comprising a storage unit  
for storing at least one of (i) a geometric structure of the joint and (ii) reference  
values for determining the aperture angle.

30 14. The device as set forth in claim 12, further comprising a data output  
device for outputting the ascertained aperture angle.

15. The device as set forth in claim 12, further comprising a robot and a force measuring device for applying defined forces in defined directions onto the joint.